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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/566,907

02/03/2006

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EXAMINER

WALBERG, TERESA J

ART UNIT

PAPER NUMBER

3744

MAIL DATE

DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/566,907	<b>Applicant(s)</b> FRIESE ET AL.	
	<b>Examiner</b> Teresa J. Walberg	<b>Art Unit</b> 3744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 September 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 11-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 11-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 March 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claims 10-14 been renumbered as 11-15, since the application previously contained a claim 10.

2. Claim 1 objected to because of the following informalities: In claim 1, at line 8, there is no antecedent basis for "the front" of the tube sheet. Appropriate correction is required.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Richter (3,915,224) in view of Brucher (6,148,908).

Richter discloses an apparatus and process for cooling hot gas (see figure) from a partial oxidation reactor (col. 1, last 2 lines) including horizontal

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duct (2 and the portion with an arrow leading into 2) fluidly connected to a tube having a main tubular part in a vessel (at 41, 42, 43) and an upstream tubular part (at 3) positioned in the horizontal duct (the bottom wall extends into chamber 2), and sealing connected to a tube sheet (the bottom wall that extends into chamber 2) that is also positioned in the horizontal duct (at 2), passing the hot gas through the tube (3, 4, 41), the exterior of the main tubular part being cooled by an evaporating liquid (col. 1, lines 29-30) flowing freely inside the vessel (1) and around the tube (3, 4, 41), a vessel (1) with a cooling medium compartment (see figure), an inlet (L1) to supply fresh cooling medium and an outlet for discharge of used cooling medium (outlet at left upper portion of tank 1 in figure), the vessel having an inlet and an outlet for cooled gas (see figure), at least one heat exchange tube (4) connecting the inlet and outlet (see figure), the tube being mounted in a tube plate (see figure), means for extracting a volume of the cooling medium from the compartment (L in figure), the upstream end of the tube being provided with a cooling means (5), to supply a mixture of the extracted cooling medium and part or all of the fresh cooling medium as supplied to the vessel along the exterior of the upstream end of the tube (see figure), an annular sleeve (5') being positioned around the upstream end of the heat exchange tube (3) and the upstream end being mounted in a tube sheet (see figure), the annular sleeve (5') having an opening to allow the mixture of extracted cooling medium and part of all of the fresh cooling medium to enter and an outlet opening fluidly connected to the cooling medium compartment (see figure).

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Richter does not disclose the ratio of the fresh and extracted cooling medium. However, it would have been obvious to one of ordinary skill in the art to use any desired ratio based on the intended use of the device and the desired output temperatures.

Richter does not disclose the process gas reactor being connected to the horizontal duct at its lower end.

Brucher discloses an apparatus and process for cooling hot gas (Fig. 1) including a vessel (12) with a cooling medium compartment (Fig. 4), a process gas generator (1) fluidly connected at its lower end (at 3) to a horizontal duct (3,4).

It would have been obvious in view of Brucher to connect the process gas reactor of Richter to the horizontal duct at its lower end, since Richter leaves it to one of ordinary skill in the art to determine at what end the process gas reactor is to be connected to the cooling compartment.

5. Claims 8, 9, and 11-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Richter (3,915,224) in view of Brucher (6,148,908) and further in view of Schuurman (4,029,054).

Richter in view of Brucher, as discussed above, discloses an apparatus and process for cooling hot gas as claimed including a horizontal duct (2 in Figure) and the cooling medium compartment being divided into a plurality of

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compartments (at 5 and on either side of 8), but do not disclose means to supply part of the fresh cooling medium to an elevated portion in the vessel.

Schuurman discloses a hot gas cooling device including means or injector (9 in Fig. 1) to supply part of the fresh cooling medium to an elevated portion in the vessel (4). It would have been obvious to one of ordinary skill in the art to provide means to supply part of the fresh cooling medium to an elevated portion in the cooling vessel of Richter in view of Brucher, the motivation being to more easily adjust the temperature profile in the cooling vessel.

6. Applicant's arguments filed 30 September 2008 have been fully considered but they are not persuasive.

Applicant argues that the amended claims require structure not shown by Richter or Brucher taken individually. However, the rejection is now based on Richter in view of Brucher, which together are considered to show the structure required by the amended claims, as discussed above.

Applicant argues that Richter does not show the upstream tubular part and the tube sheet being positioned in the horizontal duct. However, the upstream tubular part and the tube sheet are shown in the figure of Richter as being curved downward so as to extend into the horizontal duct 2, thus meeting these claim limitations.

Applicant argues that Schuurman does not show supplying cooling medium to an elevated portion in the heat exchange vessel, since the medium is

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supplied near the bottom of the vessel. However, the phrase "an elevated position" reads on any position above the bottom surface.

Applicant argues that the references do not show a compartment for receiving a mixture of fresh and extracted cooling medium in the horizontal duct. However, Richter show compartment 5 which receives a mixture of fresh and extracted cooling medium and has a lower portion that extends into the horizontal duct (See figure).

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Teresa J. Walberg whose telephone number is 571-272-4790. The examiner can normally be reached on M-F 8:00 - 4:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler can be reached on 571-272-4834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Teresa J. Walberg/  
Primary Examiner, Art Unit 3744

/TW/